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Thesis

THE RELATIONSHIP BETWEEN VOCABULARY

AND SCHOLARSHIP IN GRADE EIGHT

Submitted by
Lillian M. Hunt
(B.S., Simmons College, 1931)

In partial fulfillment of requirements for the degree of Master of Education

1948

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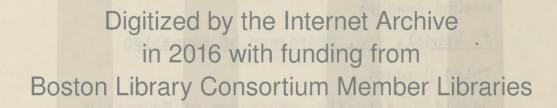


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CHAPTER I

THE PROBLEM

The advantage of possessing an excellent and exact vocabulary is quite indisputable. By well-chosen words people communicate to each other their ideas and the products of their learning in a way that allows for precise comprehension; only with an adequate word knowledge is thinking clarified; with a wide understanding of words many pleasures are enjoyed more completely; through mutual appreciation of carefully selected words, the message of radio is colorful to its fullest measure.

The extent of a vocabulary has been used as a significant measure of adult success. In a study which was conducted at the Human Engineering Laboratory, Johnson O'Connor found that

large vocabularies characterize executives and possibly outstanding men and women in other fields because words are the instruments by means of which men and women grasp the thoughts of others and with which they do their own thinking. They are the tools of thought.

Similarly, the success of a child in school has

^{1.} Johnson O'Connor. English Vocabulary Builder, Human Engineering Laboratory, Hoboken, 1939, part II

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^{1.} Johnson O'donnob. Jackley Yordbalar Buller.

vocabulary as a significant concomitant. Only in so far as he understands single words can his knowledge gradually increase. For the greater part of his studying he must demonstrate that he knows and how much he knows through the use of the particular words at his personal command. Proof of his knowledge is determined largely by his response to questions. Unless the words in the question are clearly his words, unless he can accurately interpret them, he may not be able to demonstrate that he has the real grasp of the concepts which his mental ability has actually allowed.

THE PURPOSE OF THE PROBLEM

Many teachers are of the opinion that a majority of children are greatly handicapped in school-subject achievement by lack of adequate general, as well as specific vocabularies and that attention should be focused upon this lack.

It is the purpose of this thesis to carry on a study in order to determine how important a place vocabulary holds in relation to several others factors which contribute to successful work in grade-eight major subjects, and to determine whether the place of vocabulary is important enough to show the need and emphasize the advisability of incorporating in the

vocabulary as a significant concomitant. Unly in action as he understands single words can his incoded; a rate as he understands. For the greater part of his sindy-line he would describe that he knows and how anch he knows through the use of the particular words at his mover through the use of the particular words at his miner largely by his resonase to questions. Intest the time words in the questions in the same has a largely by his resonase to questions. Intest the deal and the the head grasp of the solution of the mast he may not be sold to demonstrate that he has the real grasp of the concepts which his mental ability as setually allowed.

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It is the purpose of this thesis to derive an actual in private to content and incompant and actual and an actual and an actual and actual act

curriculum definite and meaningful vocabulary training.

STATEMENT OF THE PROBLEM

This study proposes to determine the relationship between a general vocabulary and scholarship in Eng-lish, mathematics, and social studies for grade eight. The following questions will be considered:

- 1. What is the relationship between school grades in English and scores on tests of vocabulary, reading, verbal mental ability, and non-verbal ability?
- 2. What is the relationship between school grades in mathematics and scores on tests of vocabulary, reading, verbal mental ability, and non-verbal ability?
 - 3. What is the relationship between school grades in social studies and scores on tests of vocabulary, reading, verbal mental ability, and non-verbal ability?
 - 4. What is the relationship between vocabulary scores and scores on tests of reading, verbal mental ability, and non-verbal ability?

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BACKGROUND OF THE PROBLEM

Of the many vocabulary studies found in the literature, some are, to a degree, pertinent to the problem of this thesis. One that applies quite closely has considered the importance of a particular vocabulary to success in a particular subject. Buckingham, working with first year algebra students, found their vocabulary scores and algebra scores to be significantly related.

studies which show a striking importance of vocabulary in predicting school success. Hart² used vocabulary tests with two classes of high school seniors and found he could predict success or failure of more than seventy-five per cent. Templeton³ found by using an amazingly short list of twenty-nine words that he could predict the college success of the 2430 college freshman with whom he worked. His conclusion would doubtless be considered likewise somewhat amazing.--
If a student sets out to make higher grades than his

^{1.} G. E. Buckingham. <u>Mathematics Teacher</u>, (February, 1937), 30, 76-79

^{2.} Mark Hart. "Vocabulary -- A Prediction of Success," Phi Delta Kappa, (December, 1942), 25, 92-93

^{3.} W. D. Templeton. "Vocabulary and Success in College," School and Society, (February, 1940), 51, 221-224

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classmates, he should build up a vocabulary greater than any of his classmates. Bernard broke away from the traditional assumption that a psychological rating is the best criterion of future success by proving with a group of 168 college students that vocabulary scores correlated higher with success than did the psychological ratings.

a vocabulary-building study by Johnson² is also relevant. After careful training in a mathematical vocabulary, Johnson noticed significant growth in the ability to solve problems using that vocabulary.

In summary, the vocabulary studies referred to above seem to indicate that:

- 1. The size of a person's vocabulary may be used as a measure of his adult vocational success.
- 2. A trained vocabulary in a particular subject is significantly related to grades in that subject.

^{1.} H. W. Bernard. "Some Relationships of Vocabulary to Scholarship," School and Society, (April, 1940), 51, 494-496

^{2.} Harry C. Johnson. "The Effect of Instruction in Mathematical Vocabulary upon Problem Solving in Arithmetic," <u>Journal of Educational Research</u>, (October, 1944), 38, 202

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^{2.} Harry U. Johnson. "The distance in Instruction to instruction in intheserviced vocations in the interesting december, (Jetober, 1944), 35, 255, 255

- 3. That vocabulary skill may be used in predicting school success.
- 4. That vocabulary scores correlate higher with school success than do psychological ratings.

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CHAPTER II
PROCEDURE

POPULATION

This study was carried on in the Eastern Junior

High School at Lynn, Massachusetts. Lynn is an industrial city of 101,000 population. The city district

from which Eastern Junior High School's 1220 pupils

come is largely residential; a few bakeries, laundries,

and machine shops are scattered throughout the area.

The economic status of the families represented covers

a full range, from high to low, as follows: less than

1% in the high income bracket, 17% in the low income

bracket, the remaining 82% distributed in the middle

income bracket. In 32 of the 199 homes a foreign

language is spoken: 11 French, 11 Italian, 3 Greek,

2 Chinese, 2 Polish.

The population of the study consists of six intact classes of grade eight, a total of 214 pupils. Seven of these were dropped, either because they were transferred to other schools, or because they were not pupils of the Eastern Junior High School in grade seven. The actual number of pupils for the study became 207: 108 boys and 99 girls.

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This study was carried on in the Sectors Justligh Educol at Lynn, Missachuse, Lynn is on intustrial lity of 101,000 population. The city district
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language is sported: Il French, Il Italian, I Greek.

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Classes at the Eastern Junior High School are arranged homogeniously. Grade six Kuhlmann-Anderson intelligence quotients and teacher grades are used to determine the placement of each child in a given class. For purposes of this study an attempt was made to obtain a distribution of grade eight pupils as near average as possible. Six classes were chosen from a possible ten, using, in addition to teachers' opinions of each class, the same criteria of Kuhlmann-Anderson intelligence quotients and teacher grades as a basis of choice. The resultant distribution of mental ability scores determined by the Army General Classification Test show, Figure 1, this group to be close to

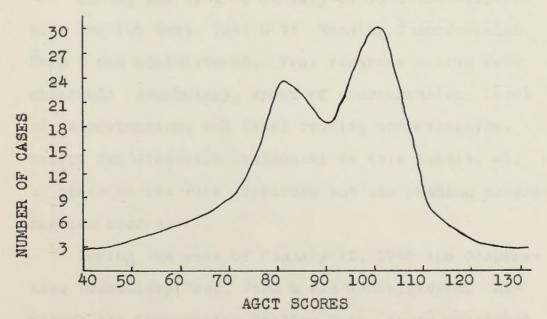


Figure I. Distribution of Mental Ability Scores of 207 Eighth Grade Children by the Army General Classification Test, Civilian Edition

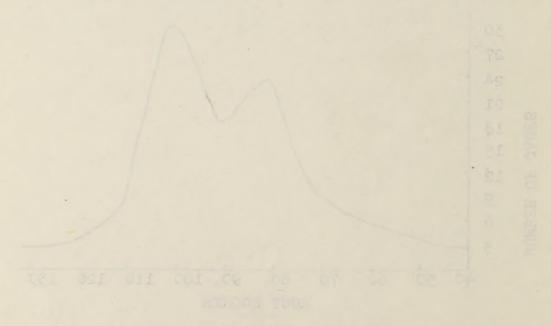


Figure I. Distriction of Mental Ability Scores of 207 Elected Drade Unildren by the Army General Classification Test, Civilian Illian

the usual for grade eight, although the bi-modal curve shows fewer scores than might be expected between 80 and 100.

PROGRAM OF TESTING

Four tests were administered: vocabulary, reading, verbal ability, and non-verbal ability. Each of the six classes was separately tested in four different testing periods, spaced from January 6, 1948 to February 12, 1948. All tests were personally administered, with the exception of one vocabulary test and one reading test for one class. These were administered for that group by its own English teacher.

During the week of January 6, 1948 the Cooperative English test, Test C 1: Reading Comprehension,

Form T was administered. Four separate scores were obtained: vocabulary, speed of comprehension, level of comprehension, and total reading comprehension.

Except for diagnosis incidental to this thesis, all of these scores were discarded but the reading comprehension scores.

During the week of January 12, 1948 the Cooperative Vocabulary Test, Form Q was administered. Although the Cooperative Reading Test, above mentioned, contains a vocabulary test and allows for a vocabulary

the usual for grade eight, although the bi-modal ourse shows fewer scores than might be expected between 80 and 100.

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Four tests were administered: vocabulary, reading, verbel ability, and non-verbal ability. Sach of
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Juring the seek of dentary 12, 1943 the Soonerstive Vocabulary Test, Form - was administered. 11though the Gooperative Regular Test, above mentioned, contains a vocabulary test and allows for a vocabulary score separate from the reading score, it seemed advisable to give a separate and longer test of vocabulary since the emphasis of this thesis is on vocabulary.

During the week of January 19, 1948 the SRA Non-Verbal Classification Form, Form AM was administered. A non-verbal ability test is included in this study because non-verbal ability is an important and measurable ability that is a factor in school success, as well as for the reason that such a measure might bring out information about the student who has ability but is unable to demonstrate it in successful school grades because of a vocabulary or reading difficulty.

During the week of February 2, 1948 the Army General Classification Test, First Civilian Edition was administered.

SCHOOL RECORDS USED

Six teacher-given grades were taken from the pupils' record cards for each of the three major subjects: English, mathematics, and social studies. Four grades were taken from grade seven records and two grades from grade eight records. Grade seven

^{1.} The Army General Classification Test, First Civilian Edition will hereafter be referred to as "AGCT."

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During the week of January 19, 1986 the Dit NonVarbal disselfication form, Form all was administered.

A non-verbal ability test is included in this study

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TABLE I

CONVERSION OF TEACHER GRADES TO GRADE POINTS

Teacher Grade	Description of Grade	Grade Points
Н	Honor Work	90
C	Creditable Work	80
P	Passing Work	70
U	Unsatisfactory Work	50

the total of grade points earned by each pupil in each subject, an average, single value for each major subject was found.

STATISTICAL PROCEDURE

In order to determine the relationships existing between the factors measured by this study, product-moment coefficients of correlation were calculated

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for the following:

Major Subjects and Cooperative Vocabulary
Major Subjects and Cooperative Reading
Major Subjects and AGCT
Major Subjects and SRA Non-Verbal
Vocabulary and Cooperative Reading
Vocabulary and AGCT
Vocabulary and SRA Non-Verbal
Reading and AGCT
Reading and SRA Non-Verbal
AGCT and SRA Non-Verbal

A scattergram¹ and a correlation table² was set up for each correlation, deviations were taken from assumed means of the two distributions and a coefficient of correlation was calculated by the productmoment formula.³

The standard error of each product-moment correlation was calculated in order to determine their

$$\mathbf{r} = \frac{\mathbf{x}'\mathbf{y}' - \mathbf{C}\mathbf{x}\mathbf{C}\mathbf{y}}{6\mathbf{x}6\mathbf{y}}$$

^{1.} Henry E. Garrett. Statistics in Psychology and Education, Second Edition, Longmans, Green and Company, New York, 1937, p. 259

^{2.} Ibid. p. 267

^{3.} Ibid. p. 270

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A southerpress and a normalisation which was not to for each correlation, deviations were taken from an acceptance of the two distributions and a confusion of sorrelation was aclouded by the product-moment formula.

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⁷⁰E .g .b16E .9

^{3.} Ibid. p. 270

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Critical ratios were then calculated² to show the significance of the relationships between each two factors correlated in this study.

In order to discover how much influence vocabulary seems to have upon success in each of the major subjects compared with the other factors measured by this thesis: reading, verbal ability, and non-verbal ability, partial correlations were found for:

Major Subjects and Vocabulary

Major Subjects and Reading

Major Subjects and AGCT

Major Subjects and SRA Non-Verbal

holding all others constant. The effect of this partialling out of factors from a given correlation, according to Garrett,3

$$6 r = \frac{1 - r^2}{\sqrt{N}}$$

2. J. P. Guilford. <u>Psychometric Methods</u>, McGraw Hill Company, Inc., New York, 1936, p. 60-61

$$CR = \frac{r}{6r}$$

3. H. E. Garrett. op. cit. p. 411

l. Charles C. Peters and Walter R. VanVoorhis. Statistical Procedures and Their Mathematical Bases, McGraw Hill Company, Inc., New York, 1940, p. 152

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Catherine C. Peters and Walter B. Vasvorule. Statherine Prozedures and Their latherstiers rages. Notice Mail Occase, Inc., New York, 1940, p. 198

S. J. D. Gullford. Paychoustric Metacts, usraw Mill Company, Inc., New York, 1236, p. 50-11

5. R. E. Garrett. op. oft. v. 411

is to eliminate the differences among the individuals which are introduced by the variable thus controlled. In general a coefficient of partial correlation may be said to represent in a convenient way the <u>net</u> relationship between two variables when the influence of one or more factors which might increase or decrease the relationship sought has been ruled out or held constant.

In order to interpret the partial correlation formulas in terms of this study, numbers were assigned to the grade points for each subject and to each of the test scores as follows: English--1, Cooperative Vocabulary--2, Cooperative Reading--3, AGCT--4, SRA Non-Verbal--5, Mathematics--6, Social Studies--7.

Twenty-seven partial correlations of the first order were calculated by variations of the partial correlation formula for three variables. 1

Twenty-one partial correlations of the second order were calculated by variations of the partial correlation formula for four variables.²

$$r_{12.3} = \frac{r_{12} - r_{12}r_{23}}{\sqrt{1 - r_{12}^2} \sqrt{1 - r_{23}^2}}$$

2. Ibid. p. 265-266

$$r_{12.34} = \frac{r_{12.3} - r_{14.3}^{24.3}}{\sqrt{1 - r_{14.3}^{2}} \sqrt{1 - r_{24.3}^{2}}}$$

^{1.} Charles W. Odell. Statistical Method in Education, D. Appleton-Century Company, Inc., New York, 1935, p. 264-265

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Twelve partial correlations of the third order were calculated by variations of the partial correlation formula for five variables. 1

1. C. W. Odell. op. cit. p. 268

$$r_{12.345} = \frac{r_{12.34} - r_{15.34}r_{25.34}}{\sqrt{1 - r_{15.34}^2} \sqrt{1 - r_{25.34}^2}}$$

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CHAPTER III

PRESENTATION AND INTERPRETATION OF DATA

The collected data are arranged in twelve tables for more ready reference and interpretation.

MAJOR SUBJECTS WITH COOPERATIVE VOCABULARY

The relationships between success in grade eight with the major subjects: English, mathematics, and social studies, and vocabulary are found by the data,

Table II, to be much less significant than was expected

TABLE II

COEFFICIENTS OF CORRELATION FOR
MAJOR SUBJECTS WITH COOPERATIVE VOCABULARY

Major Subject	Cooper r	rative Voc	abulary CR
English	•27	•06	4.50
Mathematics	.26	•06	4.33
Social Studies	•39	•06	6.60

in the premise of this thesis. The coefficients of correlation for major subjects with vocabulary denote present but slight correlation. These low correlations doubtless result from the poor vocabularies possessed by a majority of these pupils. They have a working knowledge of but a limited number of common

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words. Some of this is due to the failure of many junior high teachers to allow any time definitely directed at meaningful, vocabulary study. These limited vocabularies result, also, from the type of reading done by most of these pupils. The books used in the English classes, for example, are antiquated in form and content, completely lacking in appeal. Identical books are given to each class regardless of its mental-ability level. For many, to "read" means to stumble over meaningless words. Provision should be made to put the most appealing type of reading in the hands of all of these children in order to show them enjoyment in reading at their particular level. Instead, they fight against assigned reading which means their vocabularies remain at the limited level of comic-book language and run-of-the-mill "thrillers."

The speller used by these children is inadequate for word study except for the better classes. The words are so difficult for whole classes that frequently, after a week's study, when spelling-test day arrives, a child, as spokesman for the group, will point out a word and ask, "What is that word?" Only negligible vocabulary skill is gained from such a list.

words. Some of the la dur to the college of many -placed at meaningful, vectorinery study. Those the the draw by mont of these supile. The modes onel in of betaupline ere , tor oxamele, are antiquated to form and content, completely lacking in appeal. tts zental-ability level. For many, to "read" neans blueds nulsived .abrew assistingen weve eldnute of . Lav I islupiting wieds to putheer at themyofus cent Instead, they Tight weather and read read which .caellimet" Eliment-to-nur ton engenmel dond-simoo to

The applier under by these juilines in the lease. The for void study exampt for the better olesses. The words are so difficult for whole diaster that free questly, when applied it is that is that coup, will point out a word and see, "what is that word?" Only negligible foothulds; sill is esteed frue such a list.

The correlation of vocabulary with mathematics might have been more significant if the test had been of a different type; that is, if it had contained a specifically mathematical vocabulary rather than a general vocabulary.

There is very little relationship between social studies and vocabulary. Names from histories and geographies are tossed on assignment papers and maps with very little conception of their pronunciation or derivation.

MAJOR SUBJECTS AND COOPERATIVE READING

The relationships between success in grade eight with the major subjects: English, mathematics, and social studies, and Cooperative reading are the most significant of the four factors considered, as shown by Table III. Although mathematics and Cooperative

TABLE III

COEFFICIENTS OF CORRELATION FOR
MAJOR SUBJECTS WITH COOPERATIVE READING

Major Subject	Cooperative Readi			
major subject	r	6r	CR	
English	•49	.05	9.80	
Mathematics	•38	.06	6.33	
Social Studies	•55	.05	11.00	

a gust of other patellin, not first to draw the contribution. the same of the second control of the second Commence of the same avite short for helpenetter quality . It alway yo Reading show only slight relationship, English and Cooperative Reading and social studies and Cooperative Reading show substantial correlation.

The difference in the significance of these three correlations may be explained, in part, by the difference in the methods used at the Eastern Junior High School in the teaching of these three subjects.

Social studies, which shows the most marked correlation with Cooperative Reading, requires the greatest amount of reading. This quantative reading puts greater importance upon comprehension and speed than upon vocabulary. Lessons are prepared from several different text books, in addition to constant use of current-event magazines written for junior high pupils, and newspapers.

The subject called "English" includes spelling, grammar, composition, and literature, with disproportionate emphasis upon spelling and grammar. Too little time is provided for reading, coupled with the book difficulty already mentioned.

Mathematics seldom requires any reading. Class work and home work consist almost entirely of drill with number problems. Word problems are rarely used with the high mental-ability classes, and never with

Realing alow only slight colationable, incline and cooperative control by Reading and social studies and Cooperative Seating show substantial correlation.

The difference is the expirite and the series these three corrections and the expirited, in cart, by the difference core in the methods werd at the Markets diright edge core in the teaching of these three subjects.

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Mathematics solutes and section. Class series of drill and none work countries and none work occupies are rarely used with the piece are rarely used with the piece or and problems are rarely used.

the "lower" classes.

MAJOR SUBJECTS WITH AGCT

The relationship between success in grade eight with major subjects: English, mathematics, and social studies, and AGCT, Table IV, closely parallels

TABLE IV

COEFFICIENTS OF CORRELATION FOR MAJOR SUBJECTS WITH AGCT

		AGCT	
Major Subject	r	6r	CR
English	•28	.06	4.66
Mathematics	•29	.06	4.83
Social Studies	•33	•06	5.50

the correlations with major subjects and Cooperative Vocabulary. This would be expected since tests of vocabulary and of mental ability correlate closely. For this particular group of pupils vocabulary and mental ability, as shown by AGCT scores, seem to be of about the same importance to scholarship in each subject. Mental ability is more significantly related to social studies than to English or mathematics, possibly because of the common reading factor in AGCT and social studies.

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MAJOR SUBJECTS WITH SRA NON-VERBAL ABILITY

The relationships between SRA non-verbal ability
and success in grade eight with the major subjects:

English, mathematics, and social studies, Table V,

TABLE V

COEFFICIENTS OF CORRELATION FOR MAJOR SUBJECTS WITH SRA NON-VERBAL

	SRA	Non-Ve	rbal	
Major Subject	r	6r	CR	
English	•25	.07	3.57	
Mathematics	.24	.07	3.42	
Social Studies	.23	.07	3.28	

have the least significance of any of the factors measured by this study. Since mathematics deals with the application of relationships comparable to those evidenced by non-verbal ability, it might be expected that mathematics would be more significantly related to non-verbal ability than the correlation indicates. This apparent lack of ability to recognize and apply mathematical relationships is manifest, according to teachers' opinions, in all Eastern Junior High School subjects utilizing mathematics.

The low correlations of non-verbal ability with

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English and social studies are what might be expected since English and social studies are verbal studies.

COOPERATIVE VOCABULARY WITH COOPERATIVE READING, AGCT, AND SRA NON-VERBAL

Vocabulary is shown to have its most significant place in this study in its relationship to Cooperative Reading and AGCT, Table VI. This may be due to

TABLE VI

COEFFICIENTS OF CORRELATION FOR
COOPERATIVE VOCABULARY WITH
COOPERATIVE READING, AGCT,
AND SRA NON-VERBAL

Name of Mart	Cooperative Vocabulary				
Name of Test	r	6r	CR		
Cooperative Reading	.61	•04	15.25		
AGCT	.62	.04	15.50		
SRA Non-Verbal	•27	.06	4.50		

the fact that Cooperative Reading and AGCT have similar construction in that they both contain a measure of vocabulary.

The low SRA Non-Verbal correlation is to be expected since the non-verbal test contains no vocabulary.

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The low STA Non-Verbal correlation in to be exrecyed since the non-verbal test contains no vectorlary.

COOPERATIVE READING WITH COOPERATIVE VOCABULARY, AGCT, AND SRA NON-VERBAL

It is of interest to note from Table VII that Cooperative Vocabulary correlates with Cooperative

TABLE VII

COEFFICIENTS OF CORRELATION FOR COOPERATIVE READING WITH COOPERATIVE VOCABULARY, AGCT. SRA NON-VERBAL

Name of Test	Coop	erative	Reading	
Name Of Test	r	6r	CR	
Cooperative Vocabulary	.61	.04	15.20	
AGCT	•57	.05	11.40	
SRA Non-Verbal	.42	.06	7.00	

Reading more significantly than does AGCT, indicating that vocabulary skill is more important to ability in reading than is general mental ability.

It is not to be expected that SRA Non-Verbal would have decidedly marked correlation with Cooperative Reading since reading is a verbal ability. This correlation could indicate that skill in reading does include the non-verbal ability of recognizing relationships.

DODERRATIVE READING WITH COOPERALIVE VOCABULARY,

It is of interest to note from Table VII that Googlestive Cooperative

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it is not to be expected that SAA Non-Verbal would have desidedly marked nonvelation with Cooperative Deading eince resting is a verbal ability. This correlation could indicate that shill in conding tone include the non-verbal obility of recognizing relationables.

AGCT WITH COOPERATIVE VOCABULARY, COOPERATIVE READING, AND SRA NON-VERBAL

The correlations of AGCT with Cooperative Vocabulary and Cooperative Reading, Table VIII, indicate that both vocabulary and reading ability have a marked

TABLE VIII

COEFFICIENTS OF CORRELATION FOR AGCT WITH COOPERATIVE VOCABULARY, COOPERATIVE READING, AND SRA NON-VERBAL

V	AGCT		
Name of Test	r	6r	CR
Cooperative Vocabulary	.62	.04	15.00
Cooperative Reading	•57	.05	11.40
SRA Non-Verbal	•33	.06	5.50

relationship to mental ability, with vocabulary considerably more related to mental ability than is reading ability, as previously mentioned.

Non-verbal ability, as shown by SRA Non-Verbal scores, has only a slight relationship to AGCT which is somewhat surprising since the arithmetic and block-counting sections of AGCT would indicate the need of non-verbal ability.

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relationably to mental ability, with verabulary conciderably core related to mental ability than in reading ability, as praylously mentioned.

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PARTIAL CORRELATIONS

In this study, as is usually found, the coefficients of partial correlation are smaller than the product-moment coefficients. Tables IX, X, XI, and XII show the partial correlations, in most cases, to be so small that they have negligible significance. However, they serve to show the relative importance of vocabulary to scholarship success as compared with the importance to scholarship of all the other factors measured.

MAJOR SUBJECTS AND COOPERATIVE VOCABULARY

Partial correlations of major subjects with Cooperative Vocabulary when Cooperative Reading, AGCT, and SRA Non-Verbal are held constant, Table IX, show

TABLE IX

PARTIAL CORRELATIONS FOR MAJOR SUBJECTS WITH COOPERATIVE VOCABULARY WHEN COOPERATIVE READING, AGCT, AND SRA NON-VERBAL ARE HELD CONSTANT

Major Subject	Partial Correlation
English	•05
Mathematics	.01
Social Studies	.08

^{1.} C. W. Odell. op. cit. p. 265

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L. T. I. tdoil, on alt. o. 265

that vocabulary is slightly more significant to socialstudy success than to English or mathematics. This is
true also in the product-moment correlations, Table II,
and may be explained by the same reasons: that of
teaching methods. None of these partial correlations
is large enough to evidence any important relationship
to major-subject success.

MAJOR SUBJECTS AND COOPERATIVE READING

As with the product-moment correlations of Table III, partial correlations of major subjects with Co-operative Reading when Cooperative Vocabulary, AGCT, and SRA Non-Verbal are held constant, Table X, indi-

TABLE X

PARTIAL CORRELATIONS FOR MAJOR SUBJECTS WITH COOPERATIVE READING WHEN COOPERATIVE VOCABULARY, AGCT, AND SRA NON-VERBAL ARE HELD CONSTANT

Major Subject	Partial Correlation
English	•38
Mathematics	•14
Social Studies	•41

cate that of the four factors measured, reading is, by far, the most important factor in success with all

thet vocabulary to signify love significant to socialstudy amoresa than to English or mathematica. This is
thus also in the product-access non-elations, Table II,
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cate that of the four factors secaured, residue is, by

three major subjects, an observation which speaks eloquently for the need of emphasis upon reading, especially in view of a crying need for improved reading ability noted by all teachers of this group. Both the partial correlations with English and social studies show substantial relationships with Cooperative Reading, as is true of the earlier correlations.

The expected low correlation between mathematics and Cooperative Reading shows to a more marked degree in the partial correlations with the influence of the other measured factors ruled out than was evident in the product-moment correlations of Table III. As was previously explained, this low correlation doubtless results from the very limited use of reading ability in the teaching of mathematics.

MAJOR SUBJECTS WITH AGCT

Partial correlations of major subjects with AGCT when Cooperative Vocabulary, Cooperative Reading, and SRA Non-Verbal are held constant, Table XI, are too small to indicate any important relationship to major subject success. However, of the three, the partial correlation of AGCT with mathematics has the greatest significance. This greater relative importance of AGCT to mathematics than to the other major subjects,

three is jor subjects, an observation which epoke elemently for the need of emphasis upper realing, espectally in view of a orying need for tempoved reading
ability moved by all templars of this group. Soth the
partial correlations with Inglish and script atteins
above substantial relationships with Cooperative Readthere as is true of the earlier correlations.

Inc expected low correlation between mathematics and Coercrative Reading shows to a sine asried degree in the certific correlations with the influence of the other measured lactors ruind out than was evident in the product-moment correlations of Table III. As was product-moment correlations of Table III. As was product the very limited one of realing ability results from the teaching of mathematics.

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Pertial correlations of major subjects with WCT when Cooperative Vocabulary, Cooperative Centur, and SRI Non-Verbal are held constant, Table AI, are too amall to indicate any important relationship to saler subject success. Somewer, of the three, the partiel correlation of well with mathematics has the greatest eignificate. This greatest relative landstance of algorithms. This greatest relative landstance of algorithms at the chart of the other dajor subjects.

TABLE XI

PARTIAL CORRELATIONS FOR MAJOR SUBJECTS WITH AGCT WHEN COOPERATIVE VOCABULARY, COOPERATIVE READING, AND SRA NON-VERBAL ARE HELD CONSTANT

Major Subject	Partial Correlation
English	•02
Mathematics	.08
Social Studies	.01

shown by the partial correlations and not evidenced by the product-moment correlations, Table IV, might be expected from the nature of the AGCT test with its mathematics and block-counting sections.

MAJOR SUBJECTS WITH SRA NON-VERBAL

Partial correlations of major subjects with SRA Non-Verbal when Cooperative Vocabulary, Cooperative Reading, and AGCT are held constant, Table XII, like the partial correlations of Tables IX and XI, are too small to be significant. Here again, as was shown in the relationships between major subjects and AGCT, SRA Non-Verbal is of more importance to mathematics than to English or Social studies. This greater significance of SRA Non-Verbal to mathematics than to the other major subjects is what might be expected

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enown of the partial correlations and not evidenced by
the product-moment correlations, Table 17, might be
expected from the nature of the AGCT test with its
mathematics and blook-nounting continue.

Partial correlations of major subjects with SRA Non-Versal when Scoperative Vocadulary, Scoperative Vocadulary, Scoperative Vocadulary, Scoperative Vocadulary, and Australia are held constant, Table XII, like the castless correlations of Tables IX and XI, are test to sential to be significant. Here each, as was event in the relationships between dajor subjects and Australia and to indicate also than to ingilah or Scotal studies. This prester also that to ingilah or Scotal studies. This prester also the other major subjects is what sight to satheratics than to ingested the other major subjects is what sight to carefulation of the subjects is what sight to carefulations that the other major subjects is what sight to carefulations of the subjects is what sight to carefulations.

TABLE XII

PARTIAL CORRELATIONS FOR MAJOR SUBJECTS WITH SRA NON-VERBAL WHEN COOPERATIVE VOCABULARY, COOPERATIVE READING, AND AGCT ARE HELD CONSTANT

Major Subject	Partial Correlation
English	•05
Mathematics	.10
Social Studies	.004

from the nature of the subject matter: it is principally non-verbal and necessitates recognition of relationships in working out problems, as was previously mentioned in discussing Table V.

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CHAPTER IV

SUMMARY AND CONCLUSIONS

This study was undertaken with the purpose of determining the relationship between vocabulary and success in three, grade-eight major subjects: English, mathematics, and social studies, to indicate the need, if evidenced, of emphasis upon more careful vocabulary training.

Four tests: Cooperative Vocabulary, Cooperative Reading, AGCT, and SRA Non-Verbal, were administered to 207 eighth grade pupils. Grades in the three major subjects for six quarters: four quarters of grade seven and two of grade eight, were converted into grade points. Product-moment correlations and partial correlations were calculated between each of the test scores and grade points for each subject.

By way of summary of the data it has been found that:

l. Varying degrees of relationship exist between grades in English and the several test scores. Reading ability appears to be an appreciable aid to successful work in English, whereas verbal mental ability, vocabulary skill, and non-verbal ability, as here measured, have but slight relationship.

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This study was underhaised with the surgess of isternations the relationship between vocabulary and audones in three, grede-eight as a subjects: English, anthemasics, and social singles, to initiate the meas, of explants in uror sero careful vocabulary training.

four lests: Occoonstive Vocabulars, Gooperative Conciles, Gooperative Conciles, and Sat Non-Vornal, were aculaistered to got eighth grade suble. Orates in the three major equipment for eightheres; four quarters of grade of grade and two of grade claim, were converted into acuta grade converted into gother. Product conciletes and pertial partial between one of the test contributions and pertial partial between ones of the test contribute and contribute tor case debiest.

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cesarut work in Inglish, whereas verbal mental abillig., vocabulary shill, and non-verbal millit, as here

- 2. In general, grades in mathematics and the several test scores show less relationship than do the grades for English and social Studies with test scores. Reading ability, as related to mathematics, is the most significant of the factors measured; but it has only slight relationship to success in that subject. Verbal mental ability, vocabulary skill, and non-verbal ability follow in decreasingly low correlation.
- 3. As with English and mathematics grades, reading ability has the most significant relationship to successful work in social studies. Vocabulary skill and verbal mental ability have a greater bearing upon achievement in social studies than they do upon the other major subjects. Non-verbal ability holds a place of but slight importance to this subject.
- 4. Vocabulary skill is a substantial factor in both reading ability and verbal mental ability. Vocabulary skill, from its very nature, is not significantly related to non-verbal ability.

In this study with these instruments the data indicate, then, that reading ability is more important to scholarship than is vocabulary skill, verbal mental ability, or non-verbal ability, and that vocabulary is of substantial importance to reading ability

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IMPLICATIONS

This study, showing as it does the importance of reading ability to successful work in major subjects, is an eloquent plea for instruction toward improved reading. Teachers of subjects requiring reading ability, as well as the students themselves, agree that scholarship is hampered by the low comprehension of slow, labored reading.

Since vocabulary skill is an important factor in reading ability, it may follow that reading ability would be improved through intensive training in vocabulary skill.

Because vocabulary correlates substantially with verbal mental ability, and in view of the important place that measures of mental ability hold in pupil placement and in prediction of success, intensive vocabulary training with due emphasis upon vitalized content and social motive might be worth considering as a means of improving such measures of mental ability.

LIMITATIONS

Several limitations exist in this study:

1. In attempting to evaluate the importance of

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vocabulary to successful work in major subjects all possible factors contributing to such success were not considered. Among those not considered are: quality of teaching, general ability measured by an individual test, motivating interests, health, study time and methods, and adaptability.

- 2. The Cooperative Vocabulary test used in this study is a recognition vocabulary test only. Active word knowledge is not considered.
- 3. The reading test and the mental ability test include vocabulary tests which have an effect upon the resultant correlations with vocabulary.
- 4. The non-verbal ability test might be considered too short to be thoroughly reliable.

SUGGESTIONS FOR FURTHER STUDY

- 1. The data of this thesis should be studied for purposes of guidance to determine which pupils of this group are handicapped through low reading ability, low vocabulary skill, or under achievement, and to devise a method of giving them the special kind of help they need.
- 2. In the same light, for purposes of guidance, the pupils of low mental ability who are achieving well, the "over achievers" of this group, should be

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2. In the same ilgnt, for equipment of guidance, the pugile of tow sental ability who are achieving well, the "over achievers" of this group, should be

sought out. The cause of the apparent success in school work should be determined: that is, whether some special skill is contributing to this success, such as vocabulary skill, which might be a clue to aid other anxious children of low mental ability, or whether such "success" is achieved at the expense of general well-being.

- 3. Since this study, which has made an evaluation of the pupils' present and incidental vocabulary skill as it related to school success, has not shown the apparent importance of vocabulary to that success, it would be of interest to make a similar evaluation after conducting an experimental study in which one group would receive intensive vocabulary training while the control group proceeded with the usual course of study.
- 4. In view of the observation of Johnson O'Connor, 1 quoted earlier in this thesis, it would be of interest to get a measure of the vocabulary skill of high school seniors and then conduct a follow-up study to find the relationship between vocabulary skill and the type of positions held. Such a study would serve as a guidance tool to indicate the pos-

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sible value of vocabulary in predicting work success in certain jobs.

- 5. A study might be conducted to determine how many more words high ranking students know than low ranking students know as a basis for learning the needs of the two groups.
- 6. A follow-up of this study might be made to determine how well the data predict high school success.
- 7. A follow-up study might be made to determine what change ensues in vocabulary skill from grade to grade.

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- 5. A study wight be conducted to determine how many more words high ranking students know than low ranking students on the two groups.
- 6. I fullew-up of tale study might be mude to determine now well the data prodict high achool auc-
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APPENDIX A

SAMPLE SCATTERGRAM
SAMPLE PRODUCT-MOMENT CORRELATION

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Chart I. Sample Scattergram: Cooperative Vocabulary and AGCT

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APPENDIX B

GENERAL PURPOSE TABLE

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GENERAL PURP DSE TABLE

		rical Valu		Mental A			Cooperati Sco	ve Reading res		Cooperative Vocabulary
Pupils' Names	English	Mathe- matics	Social Studies	AGCT	SRA Non-verbal	Vocabu- lary	Speed	Level	Total	Scores
Adams, J. Adrien, R. Ahern, M. Anderson, I. Annis, C. Arena, J. Aulson, M. Bailey, R. Barber, L. Barr, R. Beaudet, P. Beaupre, J. Bickford, R. Bissell, J. Blaisdell, J. Bowzer, Delores Bowzer, Donald Brazell, C. Brothers, D. Brown, D. Buckley, B. Buckley, P. Bullard, H. Buttrick, C. Caldwell, J. Carr, J. Carvalho, H. Cassey, M. Cecil, J. Chamberlain, R. Clark, C. Clinton, W. Cochran, G. Colpitts, H. Comeau, E. Connolly, R. Corrado, B. Corton, J. Crevatis, C. Crocker, L. Crowe, E. Crowe, R.	78 76 71 81 81 86 86 70 70 70 70 70 70 70 70 70 70 70 70 70	78 71 68 71 68 65 65 65 70 81 70 81 70 70 71 71 71 71 71 71 71 71 71 71 71 71 71	81 66 78 78 78 77 77 87 77 87 77 87 77 77 77	111 75 810 905 109 1096 1096 1096 1096 1096 1097 1097 1097 1099 1097 1099 1097 1099 1097 1099 1099	108 97 68 102 110 93 121 91 105 100 98 99 71 96 78 87 101 91 87 107 113 108 77 108 77 108 77 108 77 109 84 93 116 91 105 106 91 107 117 108 109 109 109 109 109 109 109 109	45 45 26 42 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 45 33 34 45 36 36 36 36 36 36 36 36 36 36 36 36 36	527 50 3 4 5 5 3 4 7 4 4 4 2 7 9 1 7 4 4 6 7 9 7 7 2 5 5 3 4 7 9 0 6 6 0 4 5 1 2 4 2 3 2 3 3 4 3 5 4 3 6 4 3 3 4 3 3 4 3 3 4 3 5 4 3 6 4 3 3 4 3 3 4 3 3 4 3 5 4 3 6 4 3 3 4 3 3 4 3 5 4 3 6 4 3 6 4 3 3 4 3 5 4 3 6 4 3 6 4 3 6 4 3 6 4 3 6 4 6 6 6 6	52 27 40 73 57 58 36 31 47 47 59 42 42 43 63 53 53 54 63 53 53 53 53 53 53 53 53 53 53 53 53 53	50 27 40 40 49 53 46 46 37 51 29 32 32 32 32 32 32 32 32 33 34 34 34 34 54 53 53 53 53 53 53 53 53 53 53	46 29 24 56 31 45 31 31 35 31 31 31 31 31 31 31 31 31 31 31 31 31

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GENERAL PURPOSE TABLE (Continued)

Pupils' Names		ical Value		Mental Sco	res		Cooperative Score			Cooperative Vocabulary
rupits names	English	Mathe- matics	Social Studies	AGCT	SRA Non-verbal	Vocabu- lary	Speed	Level	Total	Scores
McManus, C Merrill, F. Messina, D Migliore, J. Miller, W. Mitchell, N. Moore, V. Morine, D. Murphy, R. Nolan, W. Norris, T. O'Blenes, R. O'Donnell, J. Oldenquist, M. Osgood, R. Pasquale, R. Peach, R. Perkins, F. Pickering, J. Pickering, P. Ralph, S. Raney, M. Rawding, J. Raymond, J. Regan, T. Reid, B. Reynolds, E. Richard, D. Richard, R. Richardson, A. Rigol, J. Robbins, F. Russo, P. Rutstein, H. Saba, J. Schultz, C Scott, R. Segal, P. Shachok, Albert Shachok, Alfred Shaw, N. Sine, J. Smith, S.	87118681333038085566665500163666103888385500650650	808 608 507 500 608 507 500 608 608 608 609 609 609 609 609 609 609 609 609 609	80 771 966 766 776 766 766 776 778 778 778 778 7	86 98 100 77 736 765 60 80 758 60 80 758 60 758 60 758 750 77 80 77 80 80 80 80 80 80 80 80 80 80 80 80 80	95 105 99 107 102 115 91 107 102 103 103 103 103 104 108 114 108 114 108 119 108 119 108 119 108 119 108 109 108 109 109 109 109 109 109 109 109 109 109	39 49 49 39 44 70 39 44 70 30 30 44 70 30 30 30 30 30 30 30 30 30 30 30 30 30	4885577776244324446437553914141471579443563433	47920225322409329165922389135199558518420190	45668665057356342194250592343136034267536790	39 520 40 53 44 31 31 31 31 31 31 31 31 31 31 31 31 31

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GENERAL PUR POSE TABLE (Continued)

		ical Value		Mental Sco	Ability res	Cooperative Reading Scores			Cooperative Vocabulary	
Pupils' Names	English	Mathe- matics	Social Studies	AGCT	SRA Non-verbal	Vocabu- lary	Speed	Level	Total	Scores
Snaddon, P. Snell, D. Spanks, N. Spearing, C. Stanley, D. Staples, A. Staples, E. Starrett, B. Stilianos, E. Sullivan, M. Tagliamonte, E. Tammara, R. Tibbetts, R. Tucker, P. Tucker, R. Uhl, Breta Ulfo, R. Varnum, E. Vose, Y. Walfield, B. Walsh, W. Warrington, J. Warrington, J. Warrington, Jean Watson, W. Whalen, P. Whincup, K. Wiggin, E. Wyman, R. Yarowski, C. Yoke, D. Zaimes, D. Zappacosta, R. Zucaro, P. Zucaro, R. Zurek, C.	71 73 56 76 75 80 77 80 77 80 81 80 81 80 70 66 76 65 75 65 75	66 80 71 70 78 86 80 78 81 80 81 81 81 81 81 81 81 81 81 81 81 81 81	78 78 78 78 78 78 78 78 78 88 78 88 78 88 77 88 77 88 77 88 77 88 77 88 77 88 77 88 77 88 77 88 77 88 78 7	105 93 88 76 96 99 82 78 96 97 106 113 96 87 87 75 85 74 76 76	134 110 111 83 107 83 99 129 99 130 94 113 126 69 96 102 95 102 98 130 113 99 94 79 69 102	4931533284345533349976472544589473369332127	43 44 94 12 34 34 45 45 45 45 45 46 46 46 47 46 47 46 47 46 47 47 47 47 47 47 47 47 47 47 47 47 47	53 53 53 53 53 53 53 53 53 53 53 53 53 5	45 45 45 45 46 54 54 54 54 54 54 54 54 54 54 54 54 54	47 331 37 31 325 340 23 388 40 244 49 49 49 49 49 49 49 49 49 49 49 49 4

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